

ENTOMOLOGY.—*Synopsis of Perigaster (Coleoptera: Curculionidae).*<sup>1</sup>

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Some time ago, Mr. W. J. Brown of Ottawa, Ontario sent the writer an undescribed species of the ceutorhynchid genus *Perigaster*. The attempt to fit this species in the existing classification brought to light several unrecorded structural peculiarities that modify the generic and specific definitions heretofore followed.

In the first place, the scrobe, which has been described as linear, oblique, and directed beneath eye, is in reality no more than a terminal oval pit for receiving the globular base of scape. From this pit there extends directly toward the eye a variably distinct sulcus which, however, does not conceal or protect the scape in its position of rest. The sulcus is often partially, and sometimes entirely, obliterated, and is always more or less punctate and scaly, in these respects contrasting strongly with the normally formed scrobe, which is deep, glabrous, and without evident sculpture except for a shagreened or alutaceous surface. In some specimens of *Perigaster* this "false" scrobe is rather deep, but its vestigial nature is shown by indefinite margins, by the presence of punctures or scales, or by other indications. As the scrobe proper is virtually effaced, its direction can not be used as a generic character.

The published requirement for simple claws is only partly correct, the claws being simple in *obscura*, minutely toothed in *cretura* and *longirostris*, and strongly toothed in *tetracantha*.

The antennal funicle can be regarded as six-segmented, although in *tetracantha* especially, and in rare individuals of the other species, there is a fairly well differentiated seventh segment at the base of the club. In the great majority of specimens the funicle appears to be truly six-segmented.

The narrow shelf-like production of the second abdominal segment (see figure 1), forming the surface over which the third segment slides when tip of abdomen is depressed, has definite taxonomic value. This structure is called simply "shelf" in key and descriptions. When the abdomen is depressed, the visible surface of the third segment becomes equally broad from side to side; this fact should be kept in mind in interpreting the published statement, "third segment narrowed at sides."

As treated here, *Perigaster* shows the following generic characters:

<sup>1</sup> Received May 27, 1931.

Rostrum wider and thicker toward apex; scrobes vestigial except at tip; scape inserted at about apical one-third, the funicle six-segmented; posterior eye margin acutely elevated; prothorax with the four usual cusps well developed, and in addition generally with a minute one on anterior margin a short distance below apical cusp (see figure 1), ocular lobes feeble or absent; base of prothorax and elytra thickened and raised; fore coxae separated by one-third to two-thirds the width of a coxa, antecoxal ridges absent, prosternal emargination deep, U-shaped; femora mutic, third tarsal segment bilobed, claws simple or toothed; third ventral narrowed at sides with abdomen in normal position; male with mid and hind tibiae mucronate.

These characters apply more strictly to the northern species; as is brought out in the key, *tetracantha* Champion from Panama differs in several important respects and properly forms a distinct subgenus.

To avoid repetition, a few general characters common to the three or four North American species are briefly outlined here and are not mentioned again in the descriptions.

*Head:* Occiput with a distinct longitudinal carina; eyes one-half to two-thirds covered in repose; scape short, failing to reach eye by about length of first funicular segment; funicle with first three segments elongated, the first much stouter. *Prothorax* subconical in shape, the sides nearly straight to moderately arcuate, hardly constricted at apex. *Elytra* with tenth interval somewhat depressed at basal third, causing a sinuation of outline as seen from above, striae 2 to 6 inclusive, especially the latter, terminating at base in a pit, femora broadly and indefinitely annulated with scales at apical third. The standard markings above consist of a band of pale scales across base of head, a stripe along each side of pronotum, wider in front, and white spots on elytra as follows: One on third interval at basal third, one on seventh interval at or a little before middle, and occasionally a smaller one at apical termination of third interval, one or more of these spots commonly missing.

The remarkable dung-bearing habits of the externally feeding larvae are described by Knab (Proc. Ent. Soc. Wash., vol. 17, 1915, p. 194). Knab's specimens, or part of them, now preserved in the National collection, prove to be *cretura* instead of *obscura* as published.

#### KEY TO SPECIES OF PERIGASTER

1. Scape very short, less than one-third length of funicle with club (ratio about 6 to 22), attached a little before middle of beak, scrobe merely an oval pit; rostrum short, scarcely longer than depth of head, in side view a little thicker at base than toward apex; distance between fore coxal almost equal to length of scape; pronotum more strongly arched longitudinally; dorsum with dense covering of minute, suberect, dark brown to black scales, with some white scales forming a stripe each side of pronotum and a very faint transverse median band on elytra reaching from margin inward about half way to suture, a few scattered white scales on apical half of elytra, on humeri, and at base of pronotum; under surface with small close-set white scales; tooth of tarsal claws long, one-half to

two-thirds length of claw; body form very stout, the elytra a little broader than long. Length, 2.45 mm.; width, 1.65 mm. Panama. *tetracantha* Champion.

Scape distinctly more than one-third length of funicle with club (ratio about 8 to 20), attached about one-third from apex; rostrum thicker toward apex; scape much longer than distance between fore coxae; scales on dorsum much larger, prostrate; tooth of tarsal claw minute or absent; form generally less stout. Species north of Mexico. . . . . 2

2. Tarsal claws simple; shelf of second ventral segment not punctate and not rugose; profile of rostrum and head more abruptly discontinuous; rostrum stout, generally much less than twice as long as broad; pronotum generally uneven, due to a conspicuous median swelling; anterior coxae separated by about two-thirds their width; elytral intervals 3, 5, and 7 frequently elevated in basal half. Southeastern United States.

*obscura* Leconte.

Claws with a minute basal tooth; shelf of second ventral generally sculptured to some extent; profile of head and beak less abruptly discontinuous; median pronotal swelling feeble or absent. . . . . 3

3. Rostrum short and stout, almost always distinctly less than twice as long as broad; shelf of second ventral smooth or lightly punctate across a narrow basal strip; entire dorsum rather even, the pronotal swelling feeble or absent and alternate elytral intervals less elevated; anterior coxae separated by one-half to two-thirds their width; body stouter. Eastern United States. . . . . *cretura* Herbst.

Rostrum longer and more slender, a little more than twice as long as broad; shelf of second ventral coarsely sculptured; ground color darker, the dorsum often marmorated; third, fifth, and seventh elytral intervals more distinctly elevated; fore coxae separated by about one-third their width. Canada, south to New Jersey and west to Washington. . . *longirostris* n. sp.

\* \* \* \*

Rostrum scarcely as long as head, with an obtuse median carina; punctures of occiput in striae; elytra with alternate intervals wider and higher. Royal Palm Park, Florida, 1 female. . . . . *alternans* Blatchley.  
(Species not seen; possibly a well developed form of *obscura*).

#### PERIGASTER CRETURA Herbst. (QUADRISPINOSA Say)

Length, 2.5-3.2 mm.; width, 1.6-2.15 mm. Robust, dorsum generally even, scales of two sizes, the larger pale ones sparse or wanting on disk of pronotum, on humeral swelling, and on various small scattered areas on elytra, being replaced to some extent on these places by much smaller, narrower, coppery scales.

Rostrum feebly arcuate, above finely and closely punctate and frequently with a narrow median line either smooth or very finely grooved, scales small and sparse above but larger on sides near apex, a band of dirty white oval scales between eyes; head with a large median flattened or concave area opposite posterior eye margin, the occipital carina often extending down to the concavity. Pronotum finely and densely punctate, commonly with an indefinite medially interrupted line of dirty white scales, surface abruptly declivous at middle of base. Elytral intervals flat to feebly convex, more convex toward sides, third, fifth, and seventh slightly broader and higher in many specimens, surface of intervals finely but irregularly sculptured or granulose, the granules on fifth, seventh, and ninth sometimes developed into minute denticles, more evidently so near apex; striae deep, with small close-



set punctures, each puncture partially closed by an oval or narrowly oblong longitudinally directed scale. Venter with close-set circular scales.

Oklahoma; Texas; Louisiana; Alabama; Florida; North Carolina; Virginia; Maryland; New Jersey; New York; Massachusetts; Michigan; Illinois. 150 specimens.

This species presents a characteristic habitus due to the very stout body form and the comparatively smooth dorsum. The relatively even distribution of vestiture gives the upper surface a smooth gray appearance, contrasting with the unevenly marked or marmorate dorsum in *longirostris* and *obscura*. *P. cretura* differs from these two also in having the scales on dorsum narrower, and the antennae inserted a little nearer to apex of beak. The apical prothoracic cusps are often feeble.

PERIGASTER OBSCURA Leconte (QUADRISPINOSA Gyll.).

Length, 2.4–3.1 mm.; width, 1.55–2.1 mm. Slightly less robust than *cretura*, the ground color darker, the larger pale scales sparser, the smaller brassy ones rather more conspicuous, the dorsum more uneven.

Rostrum moderately to rather strongly arched, finely punctate above, more coarsely at sides; head densely, more or less rugosely punctate, the area between and behind eyes flattened or concave, and often with brassy scales; pronotum typically with well developed median hump, the punctures either uniformly fine and dense, or coarser and finer intermixed, a feeble median longitudinal groove often evident; elytra with intervals convex, the third, fifth, and seventh generally somewhat elevated; striae rather deep, the strial punctures a little larger and sparser than in *cretura* or *longirostris*. The vestiture and punctation on venter, except on pro- and mesosterna, is generally sparser than in *cretura*.

Louisiana; Mississippi; Alabama; Florida; Virginia; Maryland; District of Columbia.

In typical examples from Florida, this species differs from the others in the shorter, stouter, more strongly arcuate beak, the sparser vestiture above and below, the sparser and more irregular pronotal punctures, the presence of a faint median pronotal sulcus, the feebler granulations on elytral intervals, etc. These differences break down, one by one, in the more northern specimens, leaving only the alutaceous shelf of second ventral and the absolutely simple tarsal claws as certain definitive characters. Only about two dozen specimens of this species have been seen; perhaps a greater number would contain exceptions to any single structural character.

The name *quadrspinus* Gyll. 1836, a homonym of *quadrspinus* Say 1824, was listed in the synonymy of *cretura* Hbst. by Leconte 1885 and by Dietz 1896. Gyllenhal's description, based on a Mississippi specimen, fits *obscura* Lec. better than *cretura* Hbst., so *quadrspinus* Gyll. may be considered a synonym of Leconte's species.

**Perigaster longirostris**, new species.

Figure 1.

Length, 2.2–2.6 mm.; width, 1.35–1.75 mm. (19 specimens, male and female).

Rather stout, black or dark piceous, pronotum with a broad, indefinite, medially interrupted stripe of rounded scales, elytra with scattered brown to

white rounded scales interspersed with minute narrow brassy scales giving the surface a marmorated appearance, the rounded scales more or less condensed along the suture, and sometimes also in a short transverse bar at basal third, thus forming a cross or inverted T, depending on length of sutural stripe, these marks not sharply defined. Legs reddish.

Rostrum moderately arcuate, a little more than twice as long as broad, finely and closely punctate, more sparsely toward apex, the punctures showing a tendency toward linear arrangement on upper surface behind antennal insertion, and often leaving a fairly distinct median line smooth; surface glabrous above, more or less scaly at sides. Scrobe an elongate pit one-third from apex of beak, false scrobe punctate and scaly, extending back to or almost to eye. Head densely, finely punctate, flattened or slightly concave between and behind eyes, with a band of oval scales between eyes. Pronotum densely punctate, moderately arched, abruptly declivous at middle of base; ocular

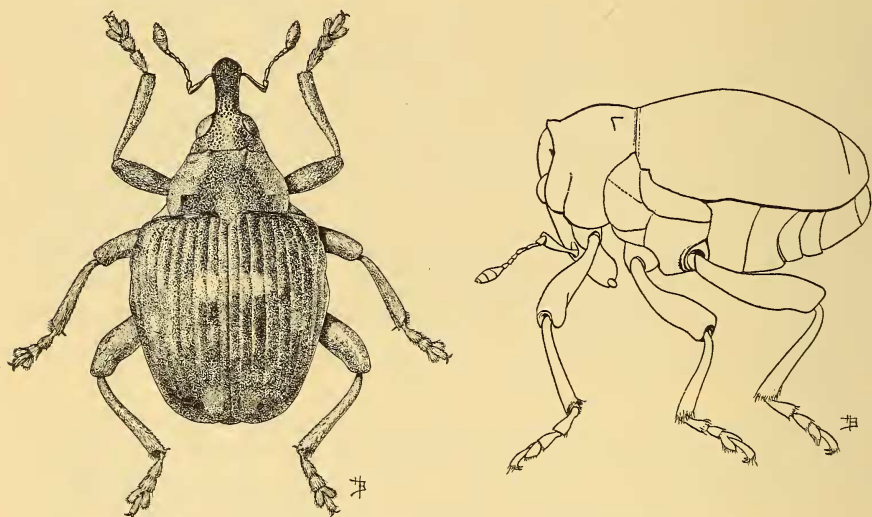


Figure 1. *Perigaster longirostris*, new species,  $\times 18$ . (Drawn by HARRY BRADFORD)

lobes more or less evident. Elytral striae rather broad and deep, striae punctures close-set, intervals convex, finely granulose, the granules on fifth, seventh, and especially on the ninth developed into minute denticles from each of which projects posteriorly a scalelike hair, the third, fifth, and seventh intervals as a rule broader and slightly elevated; humeri prominent and subglabrous; tenth interval depressed at basal one-third causing a sinuosity in outline of elytra from dorsal point of view. Venter with rounded pale scales, contiguous to overlapping over most of the surface, except on last four ventral segments and on lower part of propleura where they are sparser. Femora reddish, often with darker blotches near base and apex, indefinitely and broadly annulated with scales at apical third.

*Type locality*: Ottawa, Ontario (Harrington). 14 specimens, type and 13 paratypes.

Other localities (Paratypes): Mt. St. Hilarie, Quebec, 1 specimen; Detroit, Michigan (Hubbard and Schwarz), 1 specimen; Irvington, New Jersey

(Bischoff Collection), 1 specimen; Iowa (Wickham), 1 specimen; Pullman, Washington (J. F. Clarke), 1 specimen.

*Type*: A male, in Canadian National Collection.

*Paratypes*: 9 in Canadian National Collection; 9 in U. S. National Museum Collection, Cat. No. 43532.

The elytral vestiture varies considerably, showing a tendency toward the development of a transverse band beginning on suture at basal third and extending laterally either at right angles or obliquely backward to connect with spot on seventh interval. An irregular marmoration of the surface is conspicuous in well preserved specimens. The ocular lobe, a noteworthy character in this genus, varies from a feeble to a fairly well defined form, though never strongly developed; the lobe covers about three-fourths of the eye with rostrum in position of rest.

Properly mounted specimens of this species should be recognizable by the longer beak, narrowly separated fore coxae, presence of feeble ocular lobes, rugosely sculptured shelf of second ventral segment, better development of denticles on ninth interval of elytra, and the exceedingly minute tooth on tarsal claws. The last named character is difficult to see with less than about 40 magnifications. The upper eye margin is not so much elevated above head surface as in *cretura* and *obscura*. When the three species are compared in series, *longirostris* is seen to be distinctly the smallest.

BOTANY.—*Nine new American Asteraceae*.<sup>1</sup> S. F. BLAKE, Bureau of Plant Industry.

This paper contains descriptions of nine new species of Asteraceae, of which one is from Utah, two are from Mexico and Central America, and six are from South America. Several transfers of names and new names and two new varieties are also included.

*Vernonia calderoni* Blake, sp. nov.

Sect. *Eremoseos*; frutex; rami tomentosi glabrescentes; folia oblongo-ovata v. elliptica majuscula supra mox glabrata subtus laxe griseo-tomentosa; capitula parva 5-flora in axillis glomerata; involucrem dense tomentosum; achenia 5-6-costata dense breviterque pilosa.

Shrub 3 m. high; branches somewhat zigzag; leaves alternate; petioles thick, gray-tomentose, about 4 mm. long; blades 7-12 cm. long, 3-5 cm. wide, obtuse or acutish, apiculate, at base cuneate, remotely and obscurely callous-denticulate, papery, above dotted with sessile shining glands, glabrate except along costa, beneath thinly and somewhat floccosely but persistently tomentose and gland-dotted, featherveined, the lateral veins 8-10 pairs, prominulous beneath, the veinlets reticulate beneath; heads short-pedicelled or subsessile, crowded in axillary glomerules 1.5-2 cm. thick, these confluent at tips of stem and the short branchlets; involucre about 5 mm. high, strongly graduate, about 7-seriate, the phyllaries broadly triangular-ovate to lance-oblong and

<sup>1</sup> Received May 28, 1931.